Course Title	Cybersecurity and Artificial Intelligence				
Course Code	DLNLT504				
Course Type	Compulsory				
Level	Master (LLM)				
Year / Semester	1st / Spring				
Teacher's Name	Dr Kouroupis Konstantinos, Dr Andreas Dionysiou				
ECTS	10	**Lectures / week**		**Laboratories/week**	
Course Purpose	The goal of this course is to familiarize students with the European Union's digital strategy in the fields of cybersecurity and artificial intelligence (AI), which are fundamentally interconnected due to the potential impact of AI systems on enhancing cyber resilience. More specifically, the course aims to provide an in-depth exploration of key policies and legislative acts enacted by European institutions, while also examining the extent to which national legal frameworks, namely in Greece and Cyprus, have adapted to these regulatory requirements. Throughout various weeks, the ultimate goal is to develop students' analytical skills and their ability to apply legislation in real-world scenarios, fostering a critical understanding of digital governance. Furthermore, the course seeks to cultivate the necessary digital awareness required for navigating contemporary legal and technological challenges. Ultimately, it aims to address pressing questions such as: Does the use of AI systems serve the principles of justice? How can an AI model be harnessed effectively and rationally to maximize its benefits while ensuring ethical and legal compliance?				
Learning Outcomes	Upon successful completion of the course, students will be able to: • Interpret the distinct domains of cybersecurity and artificial intelligence. • Analyze concepts such as cybersecurity, cyber-attacks, AI, language models, facial recognition, and biometric surveillance. • Explain the revised NIS2 Directive, highlighting its key features, innovations, and regulatory changes. • Assess the level of national compliance -namely in Greece and Cyprus- with EU cybersecurity and AI regulatory requirements. • Examine legal frameworks such as the AI Act, the Council of Europe's Convention on AI, human rights, democracy, and the rule of law. • Compare EU policies with international approaches in these fields. • Critically evaluate the implications of AI applications, particularly in areas such as facial recognition and biometric surveillance. • Develop digital awareness, utilizing technological tools in a rational, creative, productive, and secure manner.				

Prerequisites	**None**	**Corequisites**	None
Course Content	The course *"Cybersecurity and Artificial Intelligence"* explores the intersection of these two contemporary fields, focusing on threats, policies, and regulatory frameworks related to digital security. It begins with an introduction to the fundamental concepts of cybersecurity and artificial intelligence, followed by an analysis of the European Union's cybersecurity strategy and the NIS2 Directive. Subsequently, it examines national cybersecurity policies – namely in Greece and Cyprus- and the EU's external policy in this domain. The course also delves into the EU AI Act and the legal aspects of facial recognition technology, emphasizing the protection of human rights. The second part of the course focuses on the governance of artificial intelligence, its application in the justice system, and its connection to cybersecurity. It critically assesses the Council of Europe's Convention on AI, as well as the legal implications of civil liability arising from AI usage. The final week is dedicated to practical applications of AI in cybersecurity, including threat prediction and attack detection. The course concludes with a review and preparation for the final examinations.		
Teaching Methodology	The course is taught entirely online through the Moodle LMS platform. Mandatory, optional, and additional bibliography (e.g., books, articles, links, open educational resources, case studies), combined with lecture notes, course presentations, and reading guides, is made available to students via the online platform. Additionally, a variety of suitable educational materials is provided through the platform in the form of simple presentations, presentations with notes, narrated presentations, interactive presentations, videos, learning scenarios, audio files, and online quizzes. Various online tools and emerging technologies are utilized: communication tools (e.g., teleconferencing, chat rooms), collaboration tools (e.g., discussion forums, blogs, wikis), as well as content development tools. Students are encouraged through the platform and the diverse technological tools to interact with their peers and the instructor, aiming to become active members of the online learning community created within the framework of the course. Finally, by using these various technological tools, each student is expected to create their own online learning community. For more information about distance learning at Frederick University, the pedagogical framework that has been developed and implemented, as well as the toolkit utilized, you can visit the following link: About Distance Learning - Frederick University		
Bibliography	1. **Greek bibliography- textbooks.** 1. Ι. Γ. Τρυψιάνη (2023), Τεχνητή Νοημοσύνη και Αστική Ευθύνη, Εκδόσεις Σάκκουλα. 2. Λ. Μήτρου (2023), Μπορεί ο αλγόριθμος, Πανεπιστημιακές εκδόσεις Κρήτης. 3. Ι. Ιγγλεζάκης (2022), Το δίκαιο της ψηφιακής οικονομίας, Εκδόσεις Σάκκουλα.		

4. Ι. Ιγγλεζάκης (2021), Δίκαιο πληροφορικής, Δ' έκδοση, Εκδόσεις Σάκκουλα.

5. Λ. Κανέλλος (2020), Εφαρμογές Τεχνητής Νοημοσύνης στο δίκαιο και στη δικαστική πρακτική, Νομική Βιβλιοθήκη.

6. Β. Καμπουρλάζος, Γ. Παπακώστας (2020), Εισαγωγή στην Υπολογιστική Νοημοσύνη, Ελληνικά ακαδημαϊκά ηλεκτρονικά συγγράμματα και βοηθήματα.

7. Βόρρας/Μήτρου (2018), Τεχνητή Νοημοσύνη και προσωπικά δεδομένα-Μια θεώρηση υπό το πρίσμα του Ευρωπαϊκού Γενικού Κανονισμού Προστασίας Δεδομένων (ΕΕ) 2016/679, ΔιΜΜΕ.

8. Σ. Τάσσης (2018), Η εποχή της Τεχνητής Νοημοσύνης, ΔιΜΕΕ.

---

2. **Foreign bibliography – textbooks.**

9. Wes Penre (2024), Synthetic Super Intelligence and the Transmutation of Humankind: A Roadmap to the Singularity and Beyond, paperback.

10. Benjamin Farrand, Helena Carrapico, Aleksei Turobov (2024), The New Geopolitics of EU Cybersecurity: Security, Economy and Sovereignty, International Affairs, Volume 100, Issue 6.

11. Christina Rupp (2024), Navigating the EU Cybersecurity Policy Ecosystem, Published by Interface.

12. Ofusori, L., Bokaba, T., & Mhlongo, S. (2024), Artificial Intelligence in Cybersecurity: A Comprehensive Review and Future Direction, Applied Artificial Intelligence, 38(1).

13. Miadzvetskaya, Yuliya; Wessel, Ramses A. (2022), The Externalisation of the EU's Cybersecurity Regime, European Papers.

14. Constantine Antonopoulos (2015), State Responsibility in Cyberspace, in Research Handbook on International Law and Cyberspace, Edward Elgar Publishing.

15. Nils Melzer (2011), Cyberwarfare and International Law, United Nations Institute for Disarmament Research.

---

3. **Online sources.**

16. Kaushik Sen (2025), List of Cybersecurity Regulations in the European Union, διαθέσιμο στο https://www.upguard.com/blog/cybersecurity-regulations-in-the-european-union.

17. CyCAT (2025), Μηχανική Όραση – Αναγνώριση Προσώπου, διαθέσιμο στο https://www.cycat.io/everyday-ai-units/unit3/.

18. C. Polito, L. Pupillo (2024), Artificial Intelligence and Cybersecurity, Intereconomics, διαθέσιμο στο https://www.intereconomics.eu/contents/year/2024/number/1/article/artificial-intelligence-and-cybersecurity.html.

19. DevX (2024, January 17), Network security protocols, διαθέσιμο στο https://www.devx.com/terms/network-security-protocols/.

	20. European Data Protection Supervisor, Opinion 44/2023 on the Proposal for Artificial Intelligence Act, διαθέσιμο στο https://www.edps.europa.eu/system/files/2023-10/2023-0137_d3269_opinion_en.pdf. 21. The Global Expansion of AI Surveillance, Carnegie Endowment for International Peace, διαθέσιμο στο https://carnegieendowment.org/research/2019/09/the-global-expansion-of-ai-surveillance?lang=en. 22. Alan Turing (1950), Computing Machinery and Intelligence, Mind, διαθέσιμο στο https://doi.org/10.1093/mind/LIX.236.433. 23. John McCarthy, What is AI? Basic Questions, διαθέσιμο στο http://jmc.stanford.edu/artificial-intelligence/what-is-ai/.
Assessment	– Weekly Educational Activities (15 %) – Assignment 1(15 %) – Assignment 2 (20 %) – Final Exam (50 %)
Language	Greek/English